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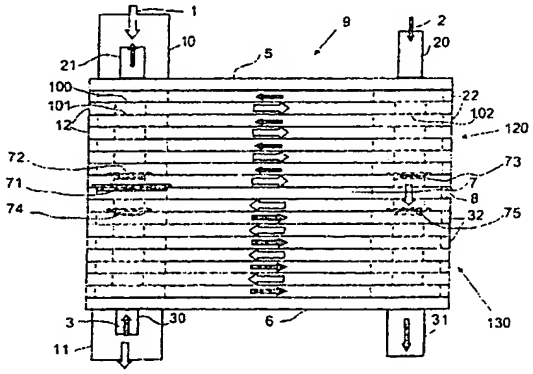
As printed

(54) Title: DEVICE FOR MULTI-STAGE HEAT EXCHANGE AND METHOD FOR PRODUCING ONE SUCH DEVICE

(54) Bezeichnung: VORRICHTUNG ZUM MEHRSTUFIGEN WÄRMEAUSTAUSCH UND VERFAHREN ZUR HERSTELLUNG EINER DERARTIGEN VORRICHTUNG



(57) Abstract: The invention relates to a device for multi-stage heat exchange and to a method for producing one such device, whereby at least three free-flowing media (fluids) are used in three flow devices subdivided into at least two heat-exchanging or flow modules. Said modules respectively consist of at least two flow elements that are arranged in such a way that different fluids alternately flow through the same. For essentially liquid fluids, the fluids are distributed to the flow elements by means of fluid collecting devices or fluid distributing devices connected in a gas-tight and liquid-tight manner. The main flow directions of all fluids in the flow elements are in essentially parallel planes. At least two flow modules are directly mounted in series and/or by means of fluid distributing devices in a flow-connected manner at least in relation to one flow device.

(57) Zusammenfassung: Die vorliegende Erfindung betrifft eine Vorrichtung zum mehrstufigen Wärmeaustausch und ein Verfahren zum Herstellen einer derartigen Vorrichtung bei dem wenigstens drei strömungsfähige Medien (Fluide) in drei Strömungseinrichtungen zum Einsatz kommen, die sich in wenigstens zwei Wärmetausch-

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oder Strömungsbaugruppen untergliedern. Letztere bestehen aus wenigstens jeweils zwei Strömungselementen, welche derart angeordnet sind, dass sie alternierend von verschiedenen Fluiden durchströmt werden. Ferner erfolgt die Verteilung der Fluide auf die Strömungselemente für im wesentlichen flüssigen Fluide über gas- und flüssigkeitsdicht verbundene Fluidsammel- und/oder -verteileinrichtung. Die Hauptströmungsrichtungen aller Fluide in den Strömungselementen liegen in zueinander im wesentlichen parallelen Ebenen. Wenigstens zwei Strömungsbaugruppen sind direkt und/oder über Fluidverteileinrichtungen strömungsverbunden wenigstens bezüglich einer Strömungseinrichtung in Reihe geschaltet.